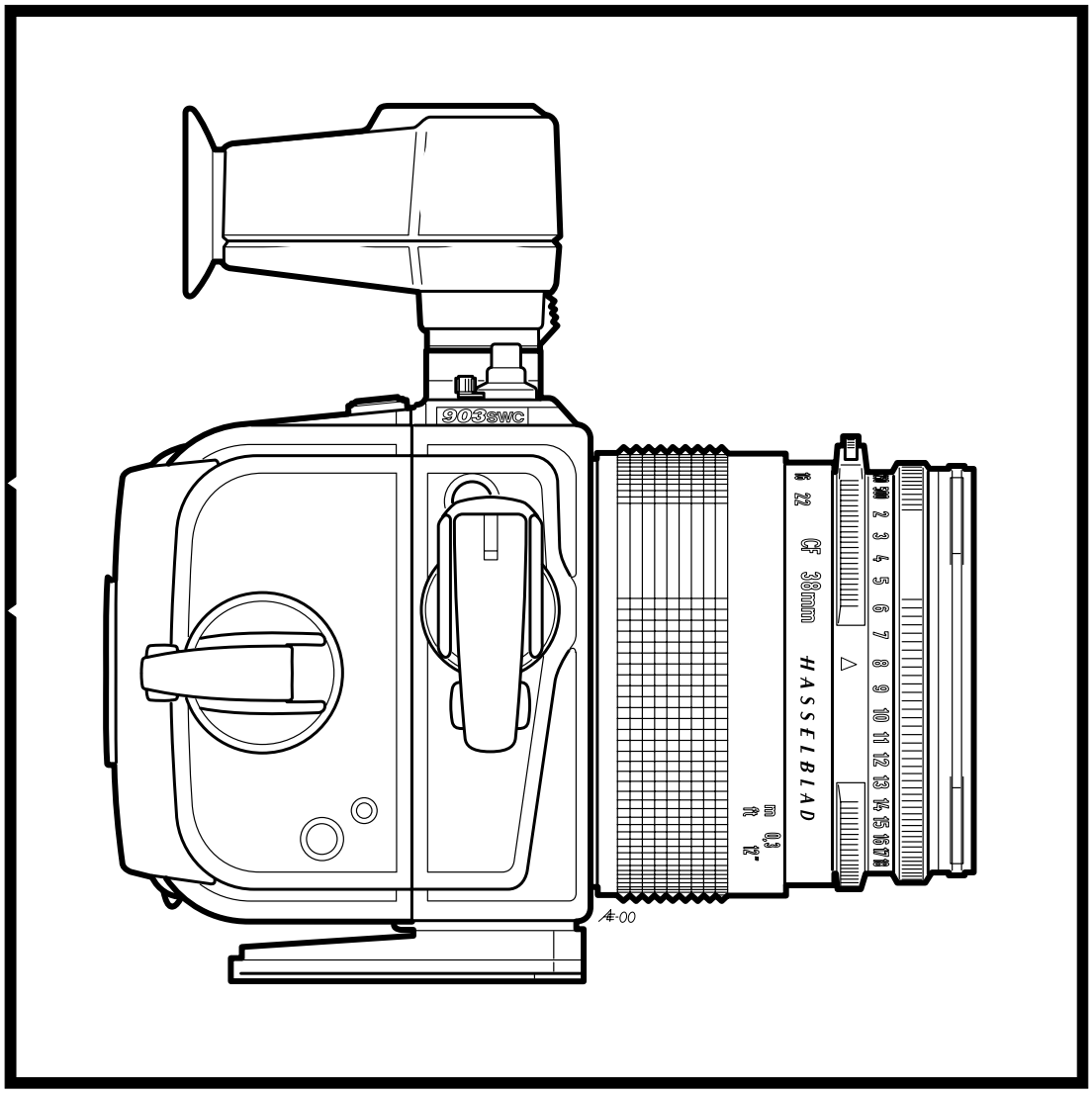
HASSELBLAD

Service Manual

903SWC



January 2001

Victor Hasselblad AB

Göteborg Sweden

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903SWC

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2. Tools
3. Disassembly
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903SWC

12/96	Tripod foot adapter/kits
05/97	New tripod foot
20/97	New camera shell
04/01	New CD-ROM - Version 2.0

903SWC

General description

Camera type:	Mechanical wide-angle camera with a permanently attached 38 mm Biogon lens, and detachable optical viewfinder and optional interchangeable film magazines.
Film format and film choices:	6x6 cm and 6x4.5 cm with different magazines; 120 and 220 with roll films, 70 mm perforated long rolls and Polaroid film with different magazines.
Lens:	Zeiss Biogon CF 4.5/38 mm T*. True wide-angle lens with 91º diagonal (72º horizontal) angle of view and Ø60 front bayonet mount.
Viewfinder:	Detachable optical viewfinder with built-in spirit level and built-in magnifier for reading lens scales through the viewfinder.
Focusing:	Focusing range of lens: 0.3 m to infinity. Depth-of-field range: 3 m to infinity at f/4.5 and 0.65 m to infinity at f/22.
Shutter:	Leaf shutter in lens, 1-1/500 s and flash synchronisation at all shutter speeds.
Film advance:	Simultaneous manual shutter winding and film advance. Foldable winding crank.
Camera body:	One-piece cast aluminium alloy shell with 1/4" and 3/8" threads and plate for Tripod quick-coupling attachment.
System compatibility:	The 903SWC accepts all film magazines in the Hasselblad system. The Biogon lens will accept Ø60 filters and Softars as well as lens shades, fixed or professional.
Dimensions:	Camera body with lens and film magazine A12 (LxWxH): 147x112x153 mm (5.8"x4.4"x6.0").
Weight:	Camera body with lens and film magazine A12: 1340 g (2 lb 15 oz.)

Tool No.	Description	Used for
902 894	Focusing gauge SWC	Focus the Biogon lens in the same way as other Hasselblad lenses. Can be used with all horizontal collimators.
109950 0747 000	Biogon adapter for V-2223	Adaption between the shutter function gauge V-2223 and the Biogon lens. The shutter can consequently be repaired and the lens can be completed before the assembly to the camera body.
102165 0000 901	Wrench	Engraved ring
104867 8005 906	Wrench	Front lens group
104117 0064 903	Wrench	Rear lens group

Additional tools for the lens shutter, please see the Service Manual CF lenses.

Tripod Foot, rear plate and cone

Remove the viewfinder. Unscrew the four screws, two (829790) and two (829760) and remove the tripod foot (30735).

Unscrew the three screws, two (823783) and one (823780).
Remove the intermediate foot (22821).

Unscrew the four screws (823640) and remove the rear plate.
Fig. 1

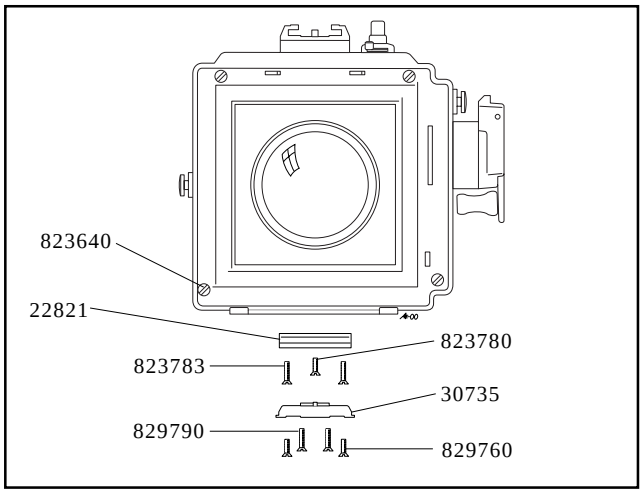


Fig. 1

Lift out the cone (13435-1).
Fig. 2

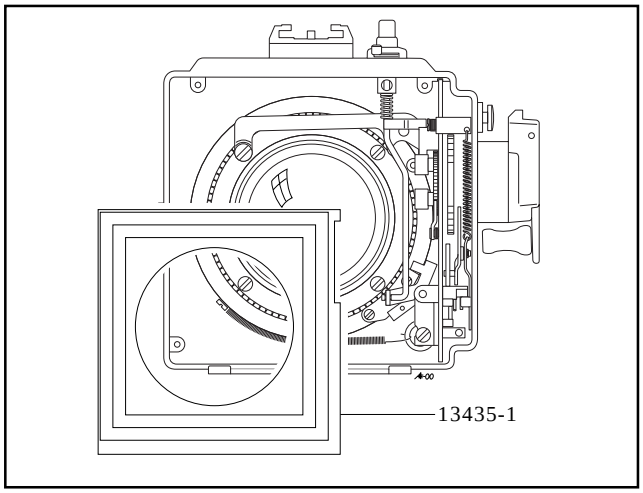


Fig. 2

Unscrew the rear lens group with the help of wrench 104117 0064 903.
Fig. 3

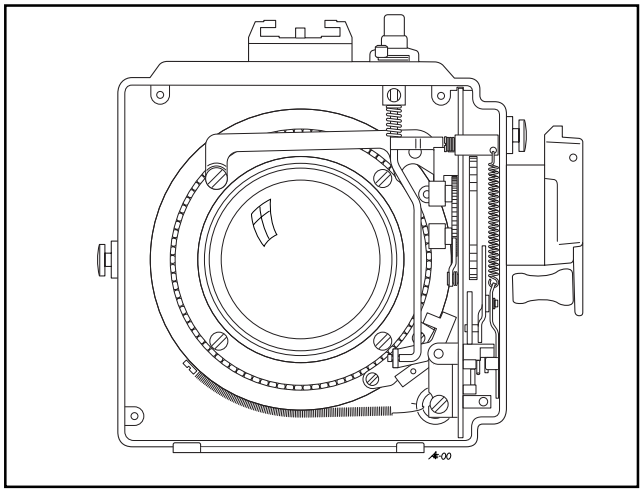


Fig. 3

Make sure the camera is released, then remove the release lever (13332-1).
Unscrew the screw (822002) and remove the catch (21165).
Fig. 4

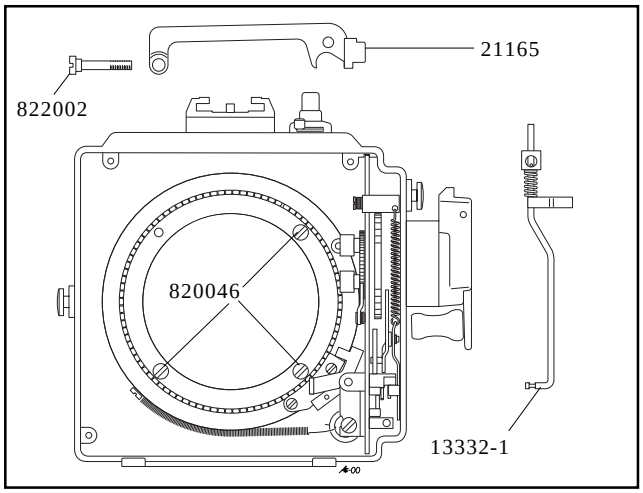


Fig. 4

The driving ring (21081-1) consists of two rings, mark their relative position.
Unhook the spring (814707) from the washer (810928).
Fig. 5

Unscrew the three screws (820046) to free the driving ring (21081-1) from the lens.
Fig. 4

The camera body can now be lifted from the lens. Do not loose the gear (13320) and the ring (13322) from the rear part of the lens!

Lift out the driving ring (21081-1) from the camera body.
Fig. 5

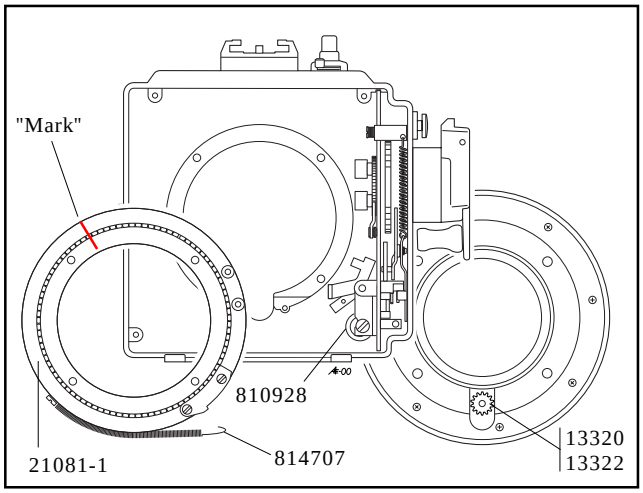


Fig. 5

Crank

Unscrew the two screws (821662) and remove the spring (22328).

Unscrew the two screws (823640) and remove the outer part of the crank (22331).
Remove the nylon string (22327) and lift out the inner part of the crank (A).
Remove the tooth wheel (22335) and the washer (810944).
Unscrew the four screws (820013 and 820015)
Remove the housing (22323).
Fig. 6

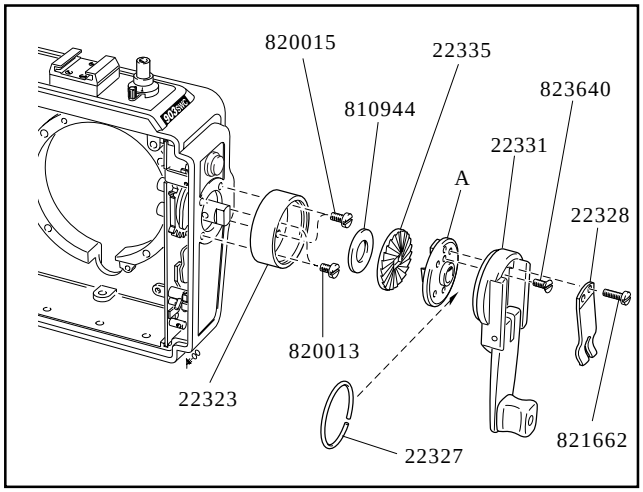


Fig. 6

Unscrew the screw (820047) and lift out the complete mechanism plate (30367-1). Fig. 7

Take out the spacer (810721) and the washer (810928) from the shell (circular area fig. 8).

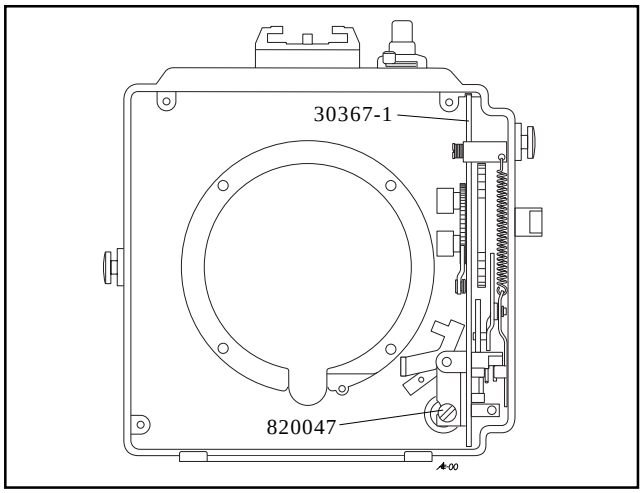


Fig. 7

Mechanism plate (30367-1)

Unhook the spring (814705) from the bracket (12873).

Lift of the catch (13427-1) incl. the signal (20737) and the spring (814705). Remove the clip (817112) and disconnect the signal incl. the spring (814705) from the catch.

Unscrew the screw (822031) and remove the signal release mechanism (13429).

Unscrew the screw (825002), which is secured with loctite, and separate the driving gear (13343-1) and the driving ratchet wheel (13340).

Unscrew the screw (822001), remove the spring (816709) and the bracket (12873).

Remove the release mechanism (13337).

Remove the spring (816751), the washer (810542) and the spring (816702) from the release mechanism.
Fig. 8

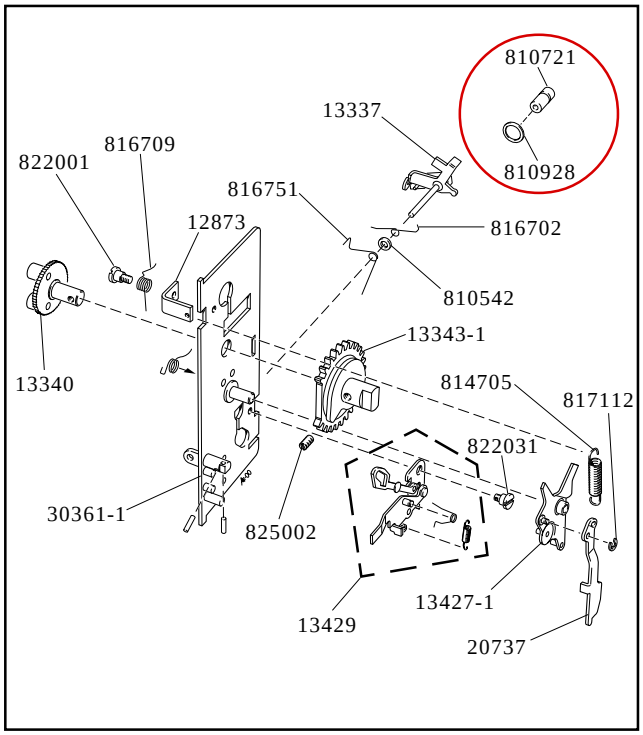


Fig. 8

Lubricate the camera as detailed in the appropriate lubrication chart. Use the lubricants listed below:

●	= Isoflex Topas L32
■	= Isoflex PDP-48
▼	= Loctite, e.g. Loctite 243
▽	= Safety lacquer

Mechanism plate (30367-1)

Lubricate according to fig. 9.

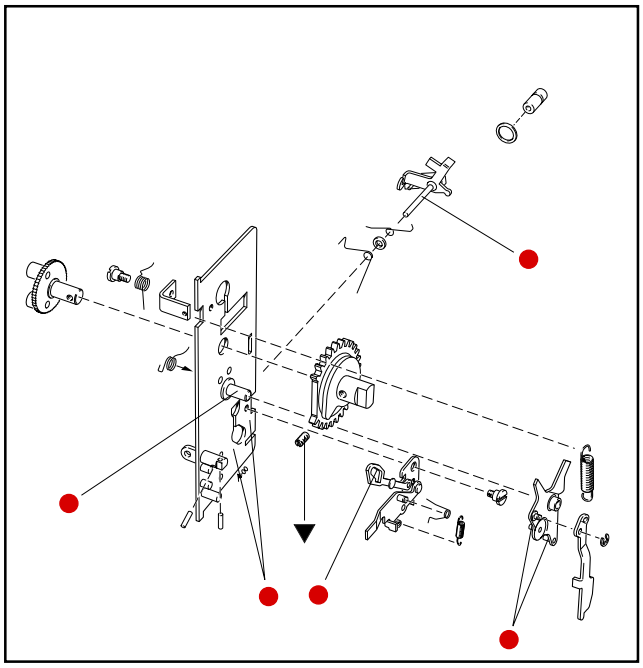


Fig. 9

Attach the spring (816702), the washer (810542) and the spring (816751) to the release mechanism (13337).

Mount the release mechanism to the mechanism plate (30361-1) and place the two springs according to Fig. 10 A.

Fit the bracket (12873) and the spring (816709) into position and secure them with the screw (822001).

Reassemble the driving gear (13343-1) and the driving ratchet wheel (13340) according to fig. 10 B and secure them with the screw (825002). Make sure that the pawl and the spring (816506) are in correct position (in relation to the driving ratchet wheel).

Refit the signal release mechanism (13429) and secure it with the screw (822031).
Fit the signal (20737) incl. the spring (814705) to the catch (13427-1) and secure it with the clip (817112).

Connect the spring (814705) to the bracket (12873) and then fit the complete catch to the mechanism plate.

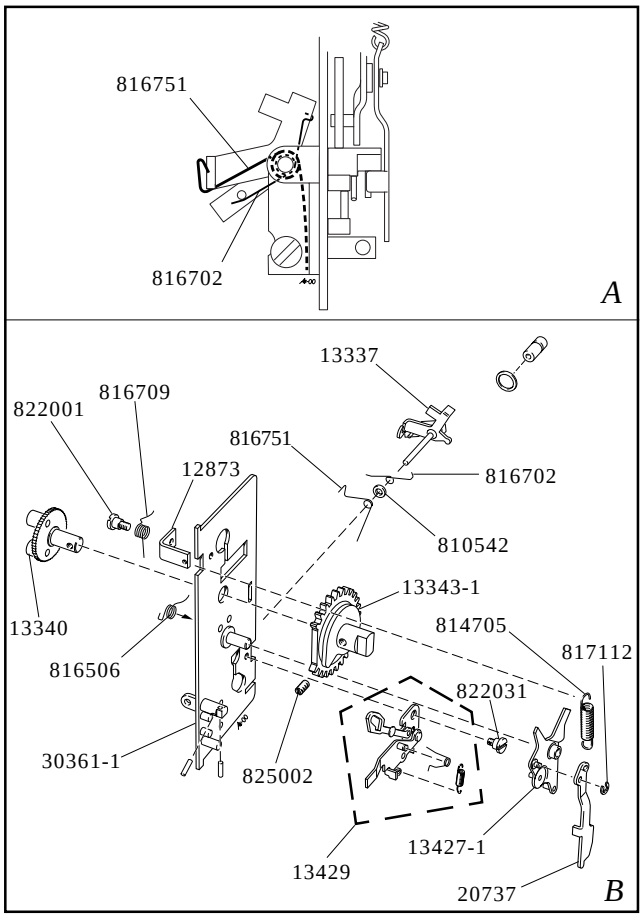


Fig. 10

Fitting the mechanism plate into the shell

Place the signal (20737) according to fig. 11.

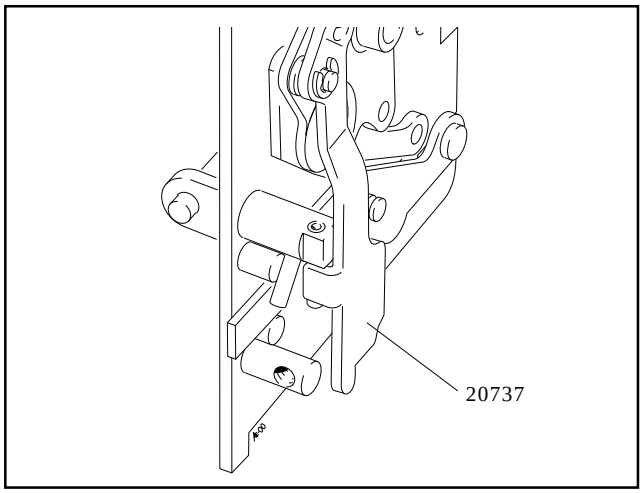


Fig. 11

Fit the mechanism plate (30367-1) into the shell. Fit the washer (810928) and the spacer (810721) and secure them into position using screw (820047).
Fig. 12

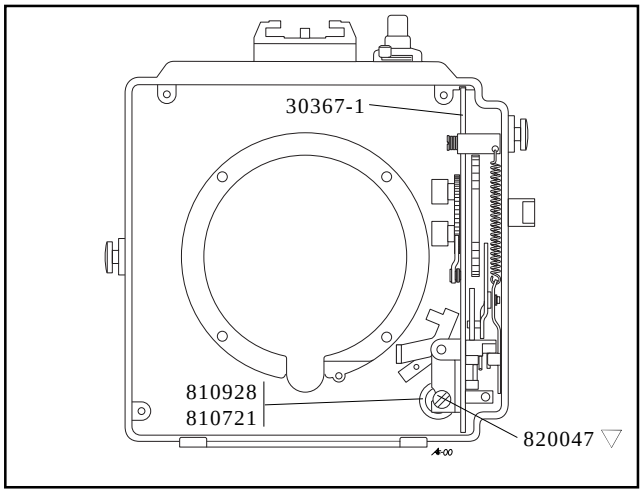


Fig. 12

Crank

Lubricate according to fig. 13.

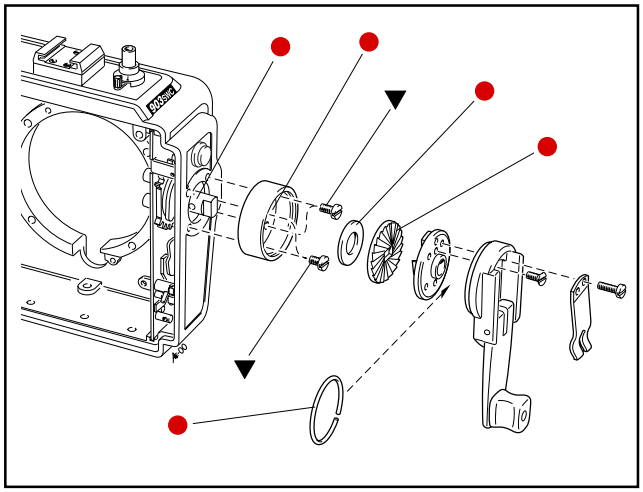


Fig. 13

Mount the housing (22323) on the camera body with the four screws (820015) and (820013). Check the axle so it turns freely. Put on the washer (810944) and the tooth wheel (22335).

Place the inner part of the crank (A) in the housing and secure it with the nylon string (22327).
Mount the crank (22321) with the two screws (823640) and the spring (22328) secured with the two screws 821662).
Fig. 14

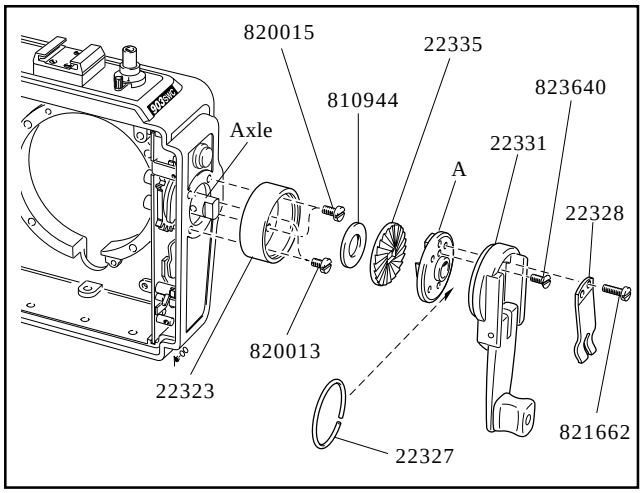


Fig. 14

Reassembling the lens and camera body

Lubricate and then put the driving ring (21081-1) in the camera with its index mark aligned. Hold it in place by using two screws (820046).
Fig. 15

If a new driving ring (21081-1) is used, align the inner and outer driving rings according to fig. 16. Mark their relative position according to fig. 15.

Place the gear (13320) and the ring (13322) on the lens and turn it clockwise to take up the play.
Fig. 15

Fit the camera body, with the driving ring aligned, on to the lens. Check that the gear and coggsector mesh properly and press down the body firmly.

Tighten the two screws (820046) and check the function.
Fig. 15

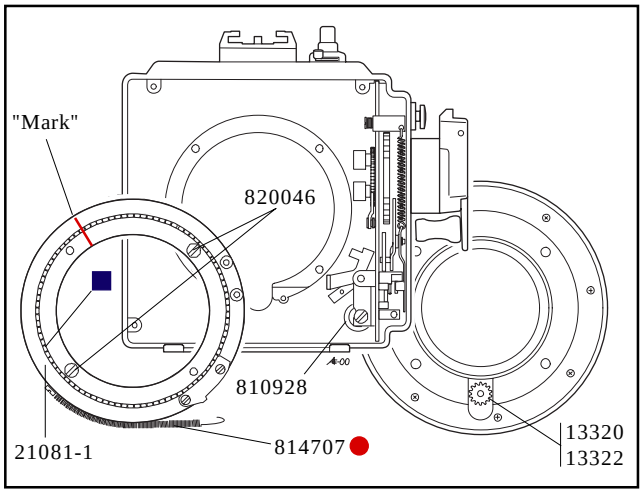


Fig. 15

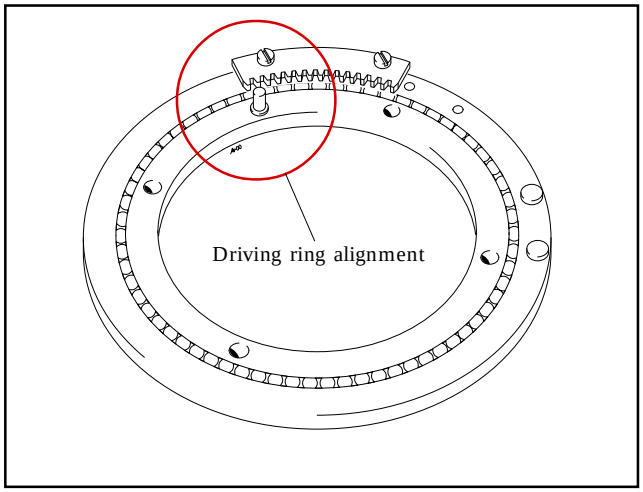


Fig. 16

Check the release sequence:

Cock the camera and move the outer driving ring slowly towards the release mechanism (13337). Free the release mechanism by hand and the shutter should release at a point just before the release mechanism leaves the nylon stop (13295).
Fig. 17

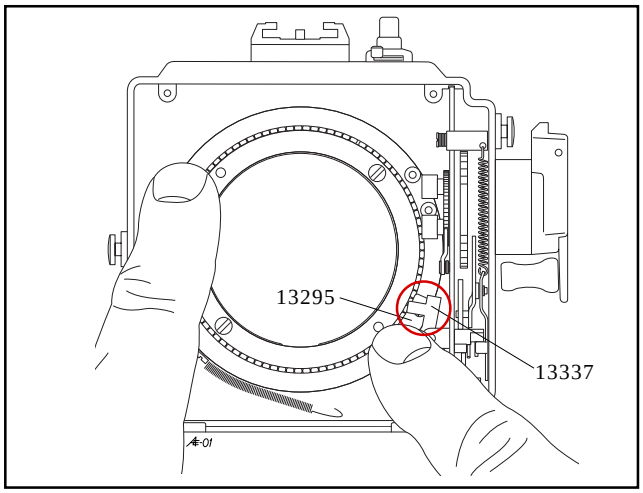


Fig. 17

If the shutter releases too early, or not at all, it is adjusted by changing the mesh between the gear (13320) and the toothed segment (13346). For a small adjustment, turn the gear (13320) 180º.
Fig. 18

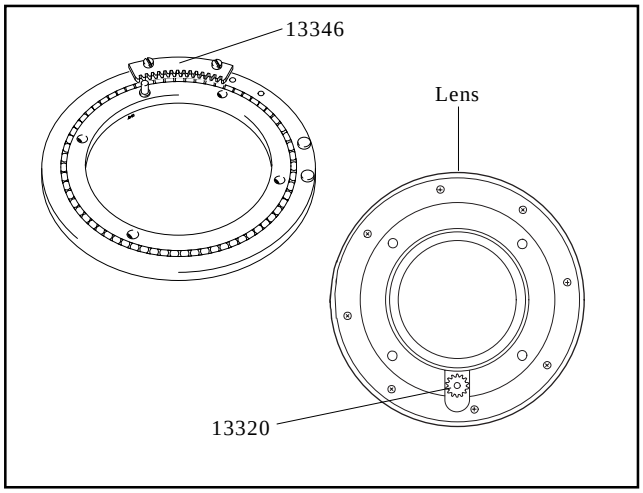


Fig. 18

Fit the catch (21165) and tighten the screw (822002) and one screw (820046).
Install the release lever (13332-1) and engage the spring (816709). Connect the spring (814707) to the washer (810928) according to the circular area and check the release sequence again.
Fig. 19

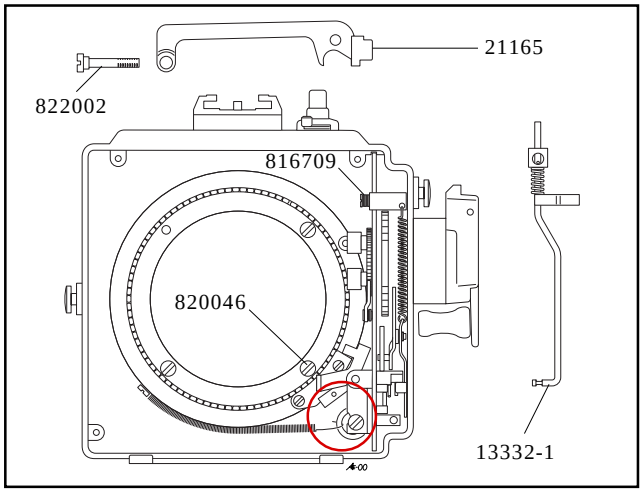


Fig. 19

Re-install the rear lens group with the help of wrench 104117 0064 903.
Fig. 20

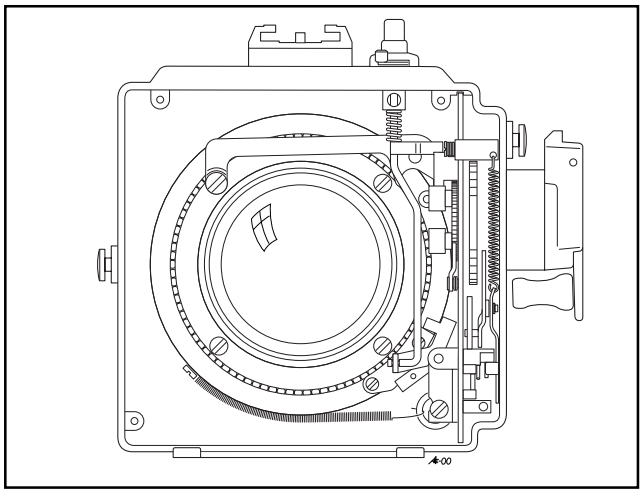


Fig. 20

Install the cone (13435-1).
Fig. 21

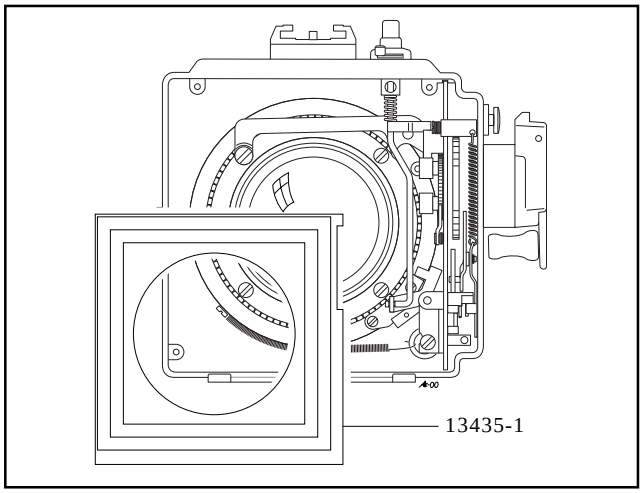


Fig. 21

Fit the rear plate (22603). Secure with the four screws (823640). Check that the rear plate is aligned with the rear edge of the camera shell. If necessary adjust with washers.

Note! The rear plate must not protrude over the shell at any point.

Fit the intermediate foot (22821). Secure with the two screws (823783) and one (823780).

Fit the tripod foot (30735) with the four screws, two (829790) and two (829760).
Fig. 22

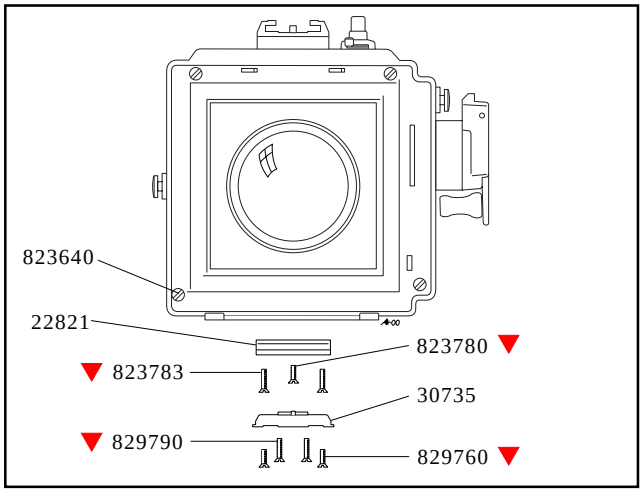
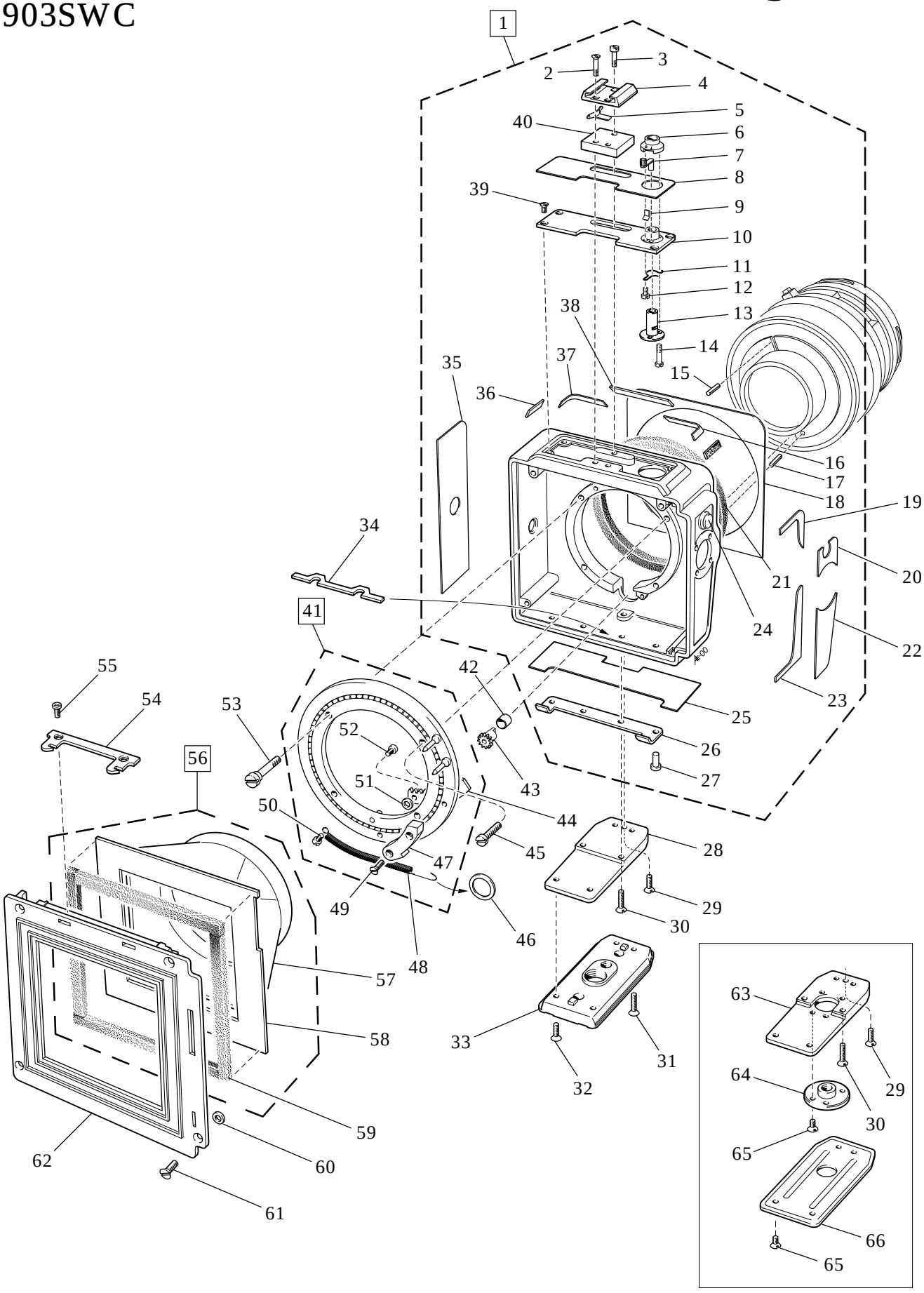


Fig. 22

Mount the viewfinder.

903SWC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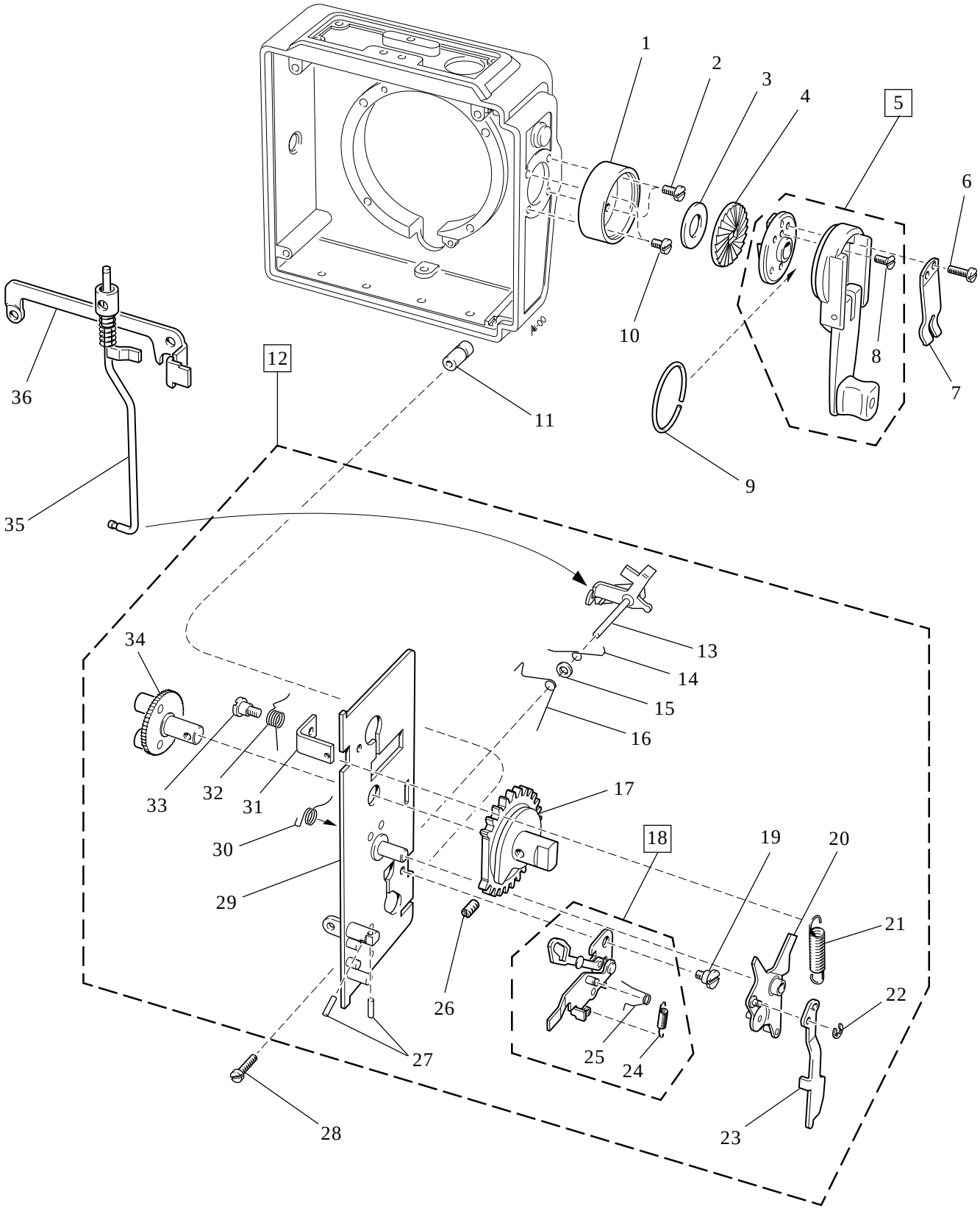
Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	40 356	Shell, complete	Chrome
	1	40 357	Shell, complete	Black
2	2	824 607	Screw	
3	1	821 608	Screw	
4	1	22 274	Shoe	
5	1	414 434	Plate spring	
6	1	20 948	Socket	
7	1	13 417	T-arm	
8	1	22 597	Leather	
9	1	13 418	Plate spring	
10	1	22 599	Cover	
11	1	816 759	Spring	
12	1	821 206	Screw	
13	1	13 134	Release button	
14	1	13 137	Screw	
15	1	812 501	Pin	
16	1	22 595	Leather	
17	1	812 201	Pin	
18	1	22 594	Leather	
19	1	22 591	Leather	
20	1	22 589	Leather	
21	1	13 633	Foam plastic strip	
22	1	22 588	Leather	
23	1	22 590	Leather	
24	2	13 466	Strap button	
25	1	22 592	Leather	
26	1	22 585	Magazine support	
27	2	831 502	Rivet	
28	1	22 821	Intermediate foot	
29	1	823 780	Screw	
30	2	823 783	Screw	
31	2	829 790	Screw	
32	2	829 760	Screw	
33	1	30 735	Tripod foot	
34	1	22 583	Spacer	
35	1	22 593	Leather	
36	2	22 612	Name plate	
37	1	22 596	Leather	
38	1	22 562	Name plate	
39	4	823 640	Screw	
40	1	22 321-1	Spacer	
41	1	21 081-1	Driving ring	
42	1	13 322	Guide ring	
43	1	13 320	Gear	
44	1	13 346	Toothed segment	
45	3	820 046	Screw	
46	1	810 928	Washer	
47	1	13 295	Nylon stop	
48	1	814 707	Spring	
49	2	823 017	Screw	
50	1	820 013	Screw	
51	2	810 408	Washer	
52	2	820 019	Screw	
53	1	822 002	Screw	

Pos No.	Pcs	Spare Part No.	Description	Remark
54	1	22 997	Magazine hook	
55	2	830 435	Screw	
56	1	13 435-1	Cone, complete	
57	1	13 394-1	Cone	
58	1	20 769-1	Frame	
59	1	12 871-1	Foam strip	
60	4	810 549	Washer	0,10 mm
	4	810 542	Washer	0,15 mm
	4	810 543	Washer	0,20 mm
	4	810 545	Washer	0,30 mm
61	4	823 640	Screw	
62	1	22 603	Rear plate	Please state serial No.
63	1	22 566	Foot	Previous type tripod foot
64	1	22 584	Tripod socket	Standard 1/4"
	1	22 667	Tripod socket	Optional 3/8"
65	8	823 735	Screw	
66	1	103 349	Slide	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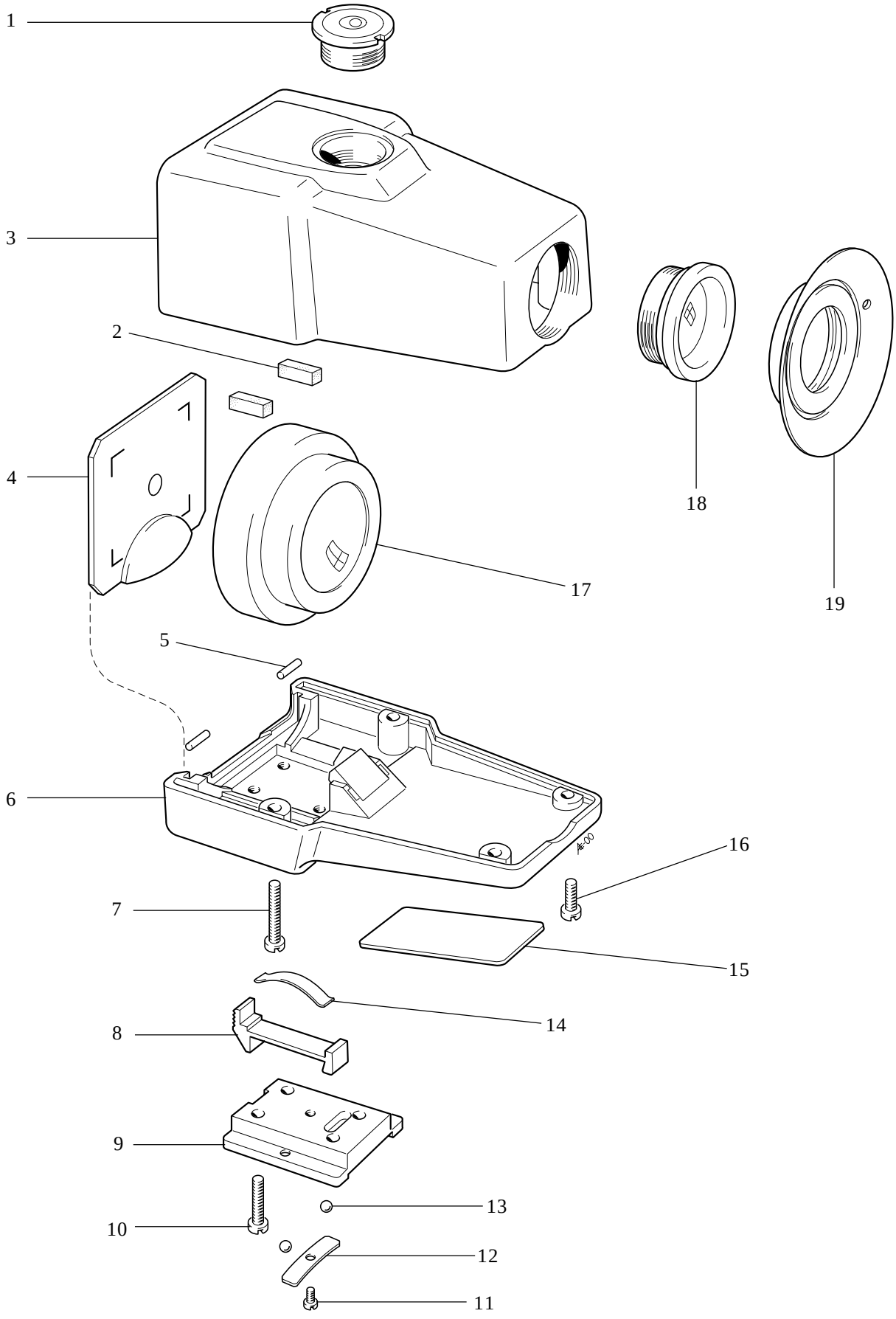
Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	22 323	Housing	
2	2	820 015	Screw	
3	1	810 944	Washer	
4	1	22 335	Tooth wheel	
5	1	22 331	Crank	
6	2	821 662	Screw	
7	1	22 328	Spring	
8	2	823 640	Screw	
9	1	22 327	Nylon string	
10	2	820 013	Screw	
11	1	810 721	Spacer	
12	1	30 367-1	Mechanism plate, complete	
13	1	13 337	Release mechanism	
14	1	816 702	Spring	
15	1	810 542	Washer	
16	1	816 751	Spring	
17	1	13 343-1	Driving gear	
18	1	13 429	Signal release mechanism	
19	1	822 031	Screw	
20	1	13 427-1	Catch	
21	1	814 705	Spring	
22	1	817 112	Clip	
23	1	20 737	Signal	
24	1	814 505	Spring	
25	1	816 606	Spring	
26	1	825 002	Screw	
27	2	811 106	Pin	
28	1	820 047	Screw	
29	1	30 361-1	Mechanism plate	
30	1	816 506	Spring	
31	1	12 873	Bracket	
32	1	816 709	Spring	
33	1	822 001	Screw	
34	1	13 340	Driving ratchet wheel	
35	1	13 332-1	Release lever	
36	1	21 165	Catch	

Viewfinder SWC



Viewfinder SWC

Pos No.	Pcs	Spare Part No.	Description	Remark
1	1	52 036/01	Libell	
2	2	52 036/02	Cushion	
3	1	52 036/03	Housing, upper	
4	1	52 036/04	Glass plate	
5	2	52 036/05	String	
6	1	52 036/06	Housing, lower	
7	2	52 036/07	Screw	
8	1	52 036/08	Catch	
9	1	52 036/09	Foot	
10	4	52 036/10	Screw	
11	1	52 036/11	Screw	
12	1	52 036/12	Plate spring	
13	2	52 036/13	Steel ball	
14	1	52 036/14	Plate spring	
15	1	52 036/15	Name plate	
16	2	52 036/16	Screw	
17	1	52 036/17	Lens element	
18	1	52 036/18	Eye piece	
19	1	52 036/19	Rubber eye cup	